

Superfund Records Center.  
SITE: Olin Chemical  
BREAK: 2-3  
OTHER: 483595

## EPA Official Record

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**From:** "Morrow, Steve G CERG" <SGMorrow@olin.com>

**To:** Jim Diloranzo/R1/USEPA/US@EPA

**Copy To:** "Murphy, Michael (Wakefield)" <MJMURPHY@mactec.com>; "Thompson, Peter" <PHThompson@mactec.com>; "Hilliard, Garland E CERG" <GEHilliard@olin.com>

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**Subject:** FW: Wilmington - Evaluation of Results

ATTACHMENT: TABLES1thru4.pdf  
Jim,

As we discussed this morning, the attached is the information on the residential well. The data has been validated and MACTEC is finishing up the data validation memo that I will send to you once I receive it.

Steve

From: Murphy, Michael (Wakefield) [mailto:MJMURPHY@mactec.com]  
Sent: Friday, October 01, 2010 5:51 PM  
To: Morrow, Steve G CERG  
Cc: Thompson, Peter  
Subject: Wilmington- Evaluation of Results

Hello Steve,

We have completed a risk evaluation for the August 2010 sampling of the Residential Well at M24/L-94. The data validation memorandum for the results is in process and will be completed on Monday. NDMA is the only carcinogenic substance detected in the recent sample. Historically, USEPA has been interested in the calculated cancer risk associated with detected concentrations of NDMA in private wells. USEPA previously provided a spreadsheet that they had used to calculate risks associated with ingestion of



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drinking water. That spreadsheet evaluated several age groups, with the assumption that NDMA has a mutagenic mechanism of action and therefore children should be evaluated as more sensitive groups than adults. We have used the USEPA spreadsheet to complete several calculations (risk calculation tables are attached). Overall, cancer risk calculations are based on representative concentrations for long-term exposures (typically, a lifetime average dose is calculated in order to calculate the risks). In that context, an average of several measured concentrations is more representative of health risk than a single measured value from a single point in time. The USEPA spreadsheet calculates risk for an assumed 70-year exposure scenario. In CERCLA risk assessments, a 30-year residential exposure scenario is typically evaluated.

We have done the following:

1. Calculated the excess lifetime cancer risk associated with an assumed lifetime exposure (70 years) to NDMA in drinking water using the most recently detected concentration of NDMA (31 ng/L or parts per trillion) assuming that young children and older children are more sensitive than adults. The result: cancer risk is  $1 \times 10^{-4}$  (at the upper end of the CERCLA risk range).
2. Calculated the excess lifetime cancer risk associated with an assumed lifetime exposure (70 years) to NDMA in drinking water using the average concentration of NDMA detected in samples from this residence over time (9.6 ng/L or parts per trillion) assuming that young children and older children are more sensitive than adults. The result: cancer risk is  $4 \times 10^{-5}$  (within the CERCLA risk range).
3. Because the resident has indicated that he is the only occupant of the residence, we have also evaluated the excess lifetime cancer risk associated with an assumed lifetime exposure (70 years) to NDMA in drinking water using the most recently detected concentration of NDMA (31 ng/L or parts per trillion) and assuming only adult exposure. The result: cancer risk is  $5 \times 10^{-5}$  (within the CERCLA risk range).
4. Calculated the excess lifetime cancer risk associated with an assumed lifetime exposure (70 years) to NDMA in drinking water using the average concentration of NDMA detected in samples from this residence over time (9.6 ng/L or parts per trillion) and assuming only adult exposure. The result: cancer risk is  $2 \times 10^{-5}$  (within the CERCLA risk range).

Michael J. Murphy

Senior Principal Scientist, Risk Assessment Group Leader

Telephone: 781-213-5600

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Mobile: 978-317-3130

mjmurphy@mactec.com

MACTEC Engineering & Consulting, Inc.

107 Audubon Road, Suite 301

Wakefield, MA01880

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